

REMARKS

Favorable reconsideration and withdrawal of the rejections set forth in the above-mentioned Official Action are respectfully requested in view of the foregoing amendments and the following remarks.

Personal Interview

Initially, Applicants' representatives express their appreciation for the Examiner's time and courtesies extended in granting and conducting a personal interview on May 22, 2003. During the interview, representative Claim 1, including certain draft amendments, was discussed. An Interview Summary, Paper No. 11, was prepared by the Examiner at the conclusion of that interview.

Claim Status

Claims 1 through 22, 37, 39, and 41 are pending in the application, with Claims 1, 12, 38, 39, and 41 being the independent claims. Non-elected Claims 23-36 and 40 have been cancelled. Claims 1, 3, 6, 12, 14, 15, 16, and 41 have been amended to even more succinctly define the invention and/or to improve their form. In so doing, Claim 1 *inter alia* has been amended herein substantially as presented in draft form at the personal interview and otherwise to improve its form. It is respectfully submitted that no new matter has been added.

Claim Rejections

Claims 1 through 10, 12, 13, 37, 39, and 41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,544,268 (Bischel, et al. '268) in view of U.S. Patent No. 4,262,994 (Sheem).

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bischel, et al. '268 in view of Sheem as applied to Claims 1 through 10, 12, 13, 37, 39, and 41 and further in view of U.S. Patent No. 6,208,791 (Bischel '791).

Claims 14, 15, and 19 through 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bischel, et al. '268 in view Sheem as applied to Claims 1 through 10, 12, 13, 37, 39, and 41 and further in view of U.S. Patent No. 6,125,217 (Paniccia, et al.).

Claims 16 through 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bischel, et al. '268 in view of Sheem as applied to Claims 1 through 10, 12, 13, 37, 39, and 41 and further in view of U.S. Patent No. 5,416,861 (Koh, et al.).

The rationale underlying each of the foregoing rejections is succinctly set forth in the Official Action.

Traversal of the Rejection

The rejections are respectfully traversed.

Claim 1 calls for an optical waveguide including a partial cylindrical portion having an elongated profile and being formed of a material transparent to light propagating along the partial cylindrical portion and a plurality of end portions. Each of the plurality of end portions has an approximately partial spherical profile smoothly joining the partial cylindrical portion and is formed of a material, which is the same as a material of which said partial cylindrical portion is formed.

At page 2 of the Official Action, the Examiner asserts with reference to Figure 5, that Bischel, et al. '268 discloses a waveguide (528) (*sic* 180)* “having an

*It is noted that in Figure 5 of Bischel, et al. '268, the waveguide is generally directed by
(continued...)

elongated profile, being formed of material transparent to light to a light propagating along the partial cylindrical portion and plurality end portions with the cylindrical shape with smooth joint.”

Bischel, et al. '268 shows a simple rectangular optical waveguide 180. As described in column 18, line 47 of Bischel, et al. '268, the arc line 177, which is shown in Figure 5, indicates electric field vectors, not a waveguide. Bischel, et al. '268 does not either disclose or suggest a waveguide having a partial cylindrical portion and a plurality of end portions with the cylindrical shape with smooth joint.

At page 3 of the Official Action, the Examiner recognizes the deficiencies of Bischel, et al. '268 *vis-à-vis* this aspect of the claimed invention. Specifically, the Examiner recognizes that “Bischel’s device fails to explicitly disclose the waveguide shape as being [either] circular or cylindrical.” Accordingly, the Examiner looks to Sheem to remedy this deficiency of Bischel, et al. '268.

The Examiner argues that Sheem discloses a waveguide having a circular shape. However, Sheem does not describe a waveguide having either a “circular” or a “cylindrical” shape in the specification. *A fortiori*, Sheem does not either disclose or suggest a waveguide comprising a plurality of end portions, each of said plurality of end portions having an approximately partial spherical profile.

The Examiner argues that a change of shape in a waveguide “is generally [recognized] as being within the level of ordinary skill in the art.” However, such argument generally dismisses as being obvious an important physical characteristic of

²/(...continued)

reference character “180”. Reference character “528” denotes a waveguide in Figure 17 of Bischel, et al. '268. See also, column 29, lines 22 through 44 of Bischel, et al. '268.

optical waveguides. The shape of a waveguide impacts on its ability to perform a desired function with a desired level of performance.

The partial spherical shaped end portions are important aspects in achieving an objective of the claimed waveguide. As noted at page 10 of the specification, the partial spherical shaped end portions of Applicants' waveguide act as a concave mirror. As a result, a high efficiency optical coupling of the waveguide to either a light emitting or light receiving device can be achieved.

It is again respectfully submitted that the combination rejection is not well made. In the Remarks of the Amendment filed October 3, 2002, it was noted that a proper combination rejection requires that the cited art *per se* to provide a basis for combining the teachings of the cited art. If the Examiner repeats the rejection, he is kindly requested to provide a showing as to where in the cited art such a basis can be found.

Similar to amended Claim 1, amended, independent Claims 12, 37, 39 and 41 include the feature of partial spherical shaped end portions.

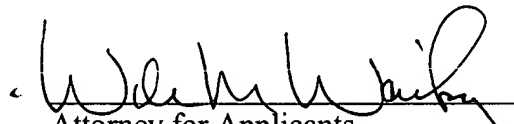
In view of the foregoing, it is respectfully submitted that Claims 1, 12, 37, 39, and 41 are allowable over the cited art whether taken individually or in combination.

Claims 2 through 11 and 13 through 22 depend either directly or indirectly from one of Claims 1 and 12 and are allowable by virtue of their dependency and in their own right for further defining Applicants' invention. Individual consideration of the dependent claims is respectfully requested.

It is respectfully submitted that the claims on file are allowable over the cited art and that the application is in condition for allowance. Favorable reconsideration and early passage to issue of the present application are earnestly solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our New York office at the address shown below.

Respectfully submitted,


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